

## 20 Study Guide

Name \_\_\_\_\_

*continued*

### Section 20.1 Electric Charge

In your textbook, read about charged objects and a microscopic view of charge on pages 542–544. For each statement below, write true or rewrite the italicized part to make the statement true.

- \_\_\_\_\_ You can determine whether an object is positively or negatively charged by bringing an object with *the opposite* charge near it.
- \_\_\_\_\_ Pulling two side-by-side pieces of tape off the surface of a table gives the pieces of tape *the same* charge.
- \_\_\_\_\_ Objects that have the same charge *attract* one another.
- \_\_\_\_\_ In a neutral atom, the number of *neutrons* must equal the number of electrons.
- \_\_\_\_\_ The designation of positive and negative for charges was first used by *J.J. Thomson*.
- \_\_\_\_\_ Touching a charged object often causes it to *lose* its charge.
- \_\_\_\_\_ The force produced by charged objects can be *greater* than gravitational force.
- \_\_\_\_\_ Removing electrons from an atom requires *friction*.
- \_\_\_\_\_ A thundercloud becomes charged when positive and negative charges are *separated*.
- \_\_\_\_\_ Atoms become charged when *protons* are removed or added.

Write + for positive or – for negative to indicate the charge that each material tends to collect when it is rubbed.

- |                   |                       |
|-------------------|-----------------------|
| _____ 11. plastic | _____ 13. hard rubber |
| _____ 12. wool    | _____ 14. glass       |

Answer the following questions. Use complete sentences.

- What are the negative and positive parts of an atom? Where are they located?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- How is charge acquired when two neutral objects are rubbed together? Which object becomes negatively charged and which becomes positively charged?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Date \_\_\_\_\_ Period \_\_\_\_\_ Name \_\_\_\_\_

## CHAPTER 20

## Study Guide

### Static Electricity

#### Vocabulary Review

Write the term that correctly completes the statement. Use each term once.

charging by conduction	Coulomb's law	grounding
charging by induction	electroscope	insulators
conductor	electrostatics	neutral
coulomb	elementary charge	

- \_\_\_\_\_ An atom is said to be \_\_\_\_\_ if the positive charge of the nucleus exactly balances the negative charge of the surrounding electrons.
- \_\_\_\_\_ \_\_\_\_\_ states that the magnitude of the force between charge  $q_A$  and charge  $q_B$ , separated by a distance  $r$ , is proportional to the magnitude of the charges and inversely proportional to the square of the distance.
- \_\_\_\_\_ \_\_\_\_\_ is the process of connecting a body to Earth to eliminate excess charge.
- \_\_\_\_\_ The study of electric charges that can be collected and held in one place is called \_\_\_\_\_.
- \_\_\_\_\_ The \_\_\_\_\_ is the SI standard unit of charge.
- \_\_\_\_\_ Giving a neutral object a charge by touching it with a charged object is called \_\_\_\_\_.
- \_\_\_\_\_ An electric \_\_\_\_\_ is a material through which charges move about easily.
- \_\_\_\_\_ A device that helps determine charge using pieces of metal foil is a(n) \_\_\_\_\_.
- \_\_\_\_\_ Materials through which electrical charges do not move easily are electrical \_\_\_\_\_.
- \_\_\_\_\_ Separating the charges in an object without touching it is called \_\_\_\_\_.
- \_\_\_\_\_ The magnitude of the charge of an electron is the \_\_\_\_\_.

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